Unicenter

Automation Services
Setting Up Service Definitions - A Tutorial

3rd edition

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ca Computer **Associates**

The Software That Manages eBusiness

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Setting Up a Service

This tutorial is designed to help you understand services and how you can set up service definitions to monitor the services your business provides.

About the Tutorial

The tutorial provides you with step by step instructions on how to set up a service in a real life business scenario.

Who Should Use This Tutorial?

This tutorial should be used by operations analysts who want to understand how to use the different components of Automation Services to set up service definitions and monitoring.

The tutorial should be used after your products have been installed and implemented at your site. Before you begin this tutorial, you should have defined the resources that support your service in the knowledge base.

The Scenario

To best describe how you set up service definition and monitoring, a scenario has been devised and is used as the basis for the service definition created during the tutorial.

If you want to follow the tutorial exactly, and set up the service on your own system, you need to have the following:

- Two linked regions—one running Unicenter NetMaster Network Automation, and the other running Unicenter SOLVE:Operations Automation and Unicenter SOLVE:Operations Automation for CICS.

- An active system image in each region including all the resources that will be used in the service definition.

If you do not have all the products, use what resources you do have defined to create the service outlined in the tutorial.

What is a Service?

A service is a business or operations function, such as a payroll system, that is provided by your computer systems. A service consists of the resources within your system that contribute to the availability of that service.

Use a service definition to help you manage the resources for a business or operations function. By monitoring these resources as a service, instead of as individual resources, you can tell directly whether the availability of a business function is being satisfied.

A typical service will include different classes of resources. It might require system resources, but it might also require other classes of resources such as SNA resources or CICS resources.

Benefits of Service Definitions

Service definitions provide you with a number of distinct advantages. They:

- Provide a different perspective of your resources and the functions they help provide

- Enable service level agreements to be met more effectively

- Allow you to consolidate your system, application, and network resources into the same service view

- Allow you to manage resource failures according to their impact on business operations

- Provide system management through services

Preparing to Set up a Service

Before you can set up a service, you need to have installed and implemented your products in your regions. You need to have done the following:

- Created a system image that includes all the resources you want to include in a service definition—a system image is created during initial implementation or you can create a new system image.

    For background information about creating system images, see the *Common User Guide*.

- Made the system image available to your region.

    For background information about controlling your system image, see the *Common User Guide*.

- Identified an active system image in the AUTOIDS parameter group (/ICS shortcut)—this allows the system image to be loaded automatically during region startup.

- Linked regions if you want your services to be made up of resources from more than one region or system—ensure that you have used the Link Region and Synchronise Database option (/MADMIN.SD path).

    Note

    > It is recommended that you link regions before you add any definitions to the knowledge base.

    For background information about administering multiple regions, see the *Administrator Guide*.

When preparation is complete, you can set up a service by completing the following tasks:

1. Identify the service you are providing.
2. Identify the resources that are critical to the availability of the service.
3. Define the service.
4. Automate the service.
5. Monitor the service.

Each task is outlined in the following sections.

Task 1—Identify the Service You Are Providing

Before you can set up a service, you need to identify what services your business provides. To help you understand what a service is, the following scenario has been provided. This scenario will be used as the basis for the service setup in this tutorial.

The Business Scenario

You are the owner of a chain of retail outlets that sell computer parts. You have a central warehouse from which the outlets obtain their stock. The warehouse has a computer system that contains a database with a list of the available stock. At each outlet, there are terminals through which shop assistants can access the warehouse database to order stock and discover prices. You want to monitor the service that provides access to the warehouse database from the retail outlets (see Figure 1-1). This service will be known as the OUTLET service.

Figure 1-1.   Business Scenario—A Computer Parts Supplier
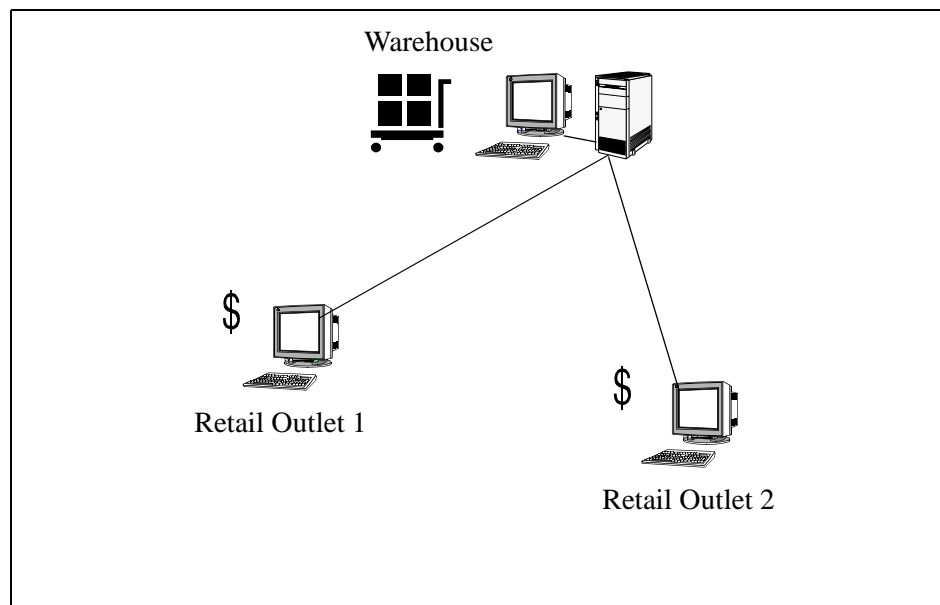
Figure 1-2 shows the system at the warehouse. The system contains the following regions:

● Region A is running Unicenter NetMaster Network Automation (which monitors SNA connectivity).

● Region B is running Unicenter SOLVE:Operations Automation (which monitors started tasks) and Unicenter SOLVE:Operations Automation for CICS (which monitors CICS transactions and the database).

You want to monitor the health of the OUTLET service without having to monitor the individual resources that make up the service. The following sections take you through the process of setting up the OUTLET service.

Figure 1-2.   Scenario—The OUTLET Service
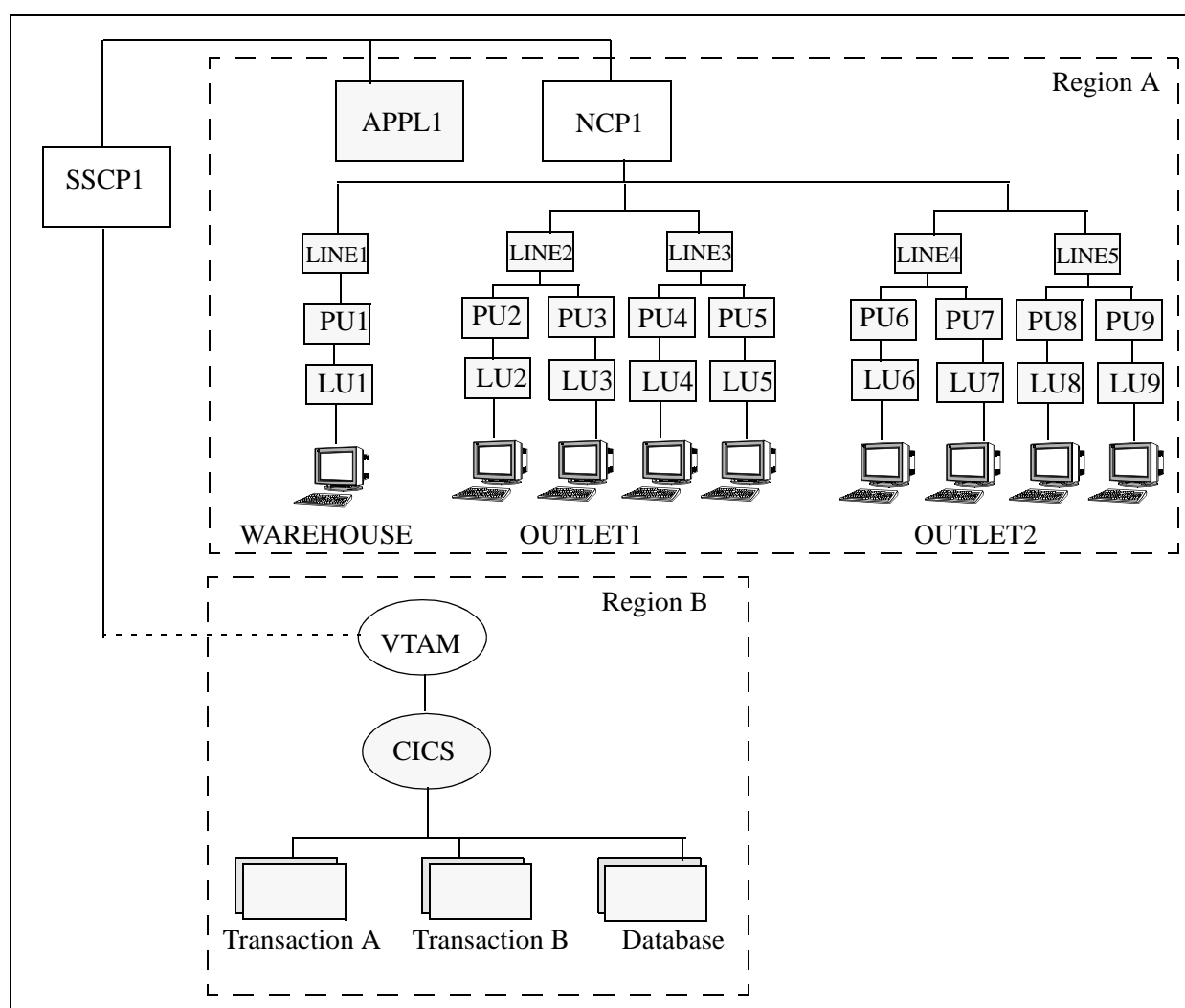
Task 2—Identify the Resources That Make up the Service

Once you have identified the service that you provide, you need to identify the resources that belong to the service.

Step 1.   Identify the resources that are critical to the availability of the OUTLET service. In this scenario (see Figure 1-2), they are:

- APPL1, LINE1 to LINE5, PU1 to PU9, LU1 to LU9 in Region A
- The CICS started task, the CICS database, and the two types of CICS transactions in Region B

Step 2.   To assist with the service definition, group the resources in Region A into the following SNA groups:

- WAREHOUSE—includes LINE1, PU1, and LU1
- OUTLET1A—includes LINE2, PU2, PU3, LU2, and LU3
- OUTLET1B—includes LINE3, PU4, PU5, LU4, and LU5
- OUTLET2A—includes LINE4, PU6, PU7, LU6, and LU7
- OUTLET2B—includes LINE5, PU8, PU9, LU8, and LU9

For background information about how to define an SNA group, see the *Unicenter NetMaster Network Automation User Guide*.

The resources that make up the service can now be listed as:

- APPL1
- WAREHOUSE
- OUTLET1A
- OUTLET1B
- OUTLET2A
- OUTLET2B
- CICS Transaction A
- CICS Transaction B
- CICS started task
- CICS database

Task 3—Define the Service

Now that the resources have been identified, you need to define the OUTLET service.

	Key Concept
[key icon]	Service definitions are stored in the knowledge base in a structure similar to that of resource definitions. All service definitions belong to a single service system image, $SERVICE 0001, which is always active. The definitions have a class of SVC.

To define the OUTLET service, perform the following steps:

Step 1. Enter the **/SADMIN.S** path to access the Service List Panel.

Step 2. Press F4 (Add) to access the Service General Description panel. This panel enables you to identify the service and to specify the service operation mode.

	Key Concept
[key icon]	The operation mode determines how the region acts on the service. They include the following: • AUTOMATED—the region monitors and has control of the service. • MANUAL—the region monitors but has no control over the service. The operation mode of a service affects the status of the resources attached to that service. If the service requires a resource to be active, the desired state of that resource is overridden. For background information about operation modes and their affect on resources, see the *Common User Guide*.

Step 3.   Specify values in the following fields for the OUTLET service:

- Name (mandatory)
- Short description (mandatory)
- Long description (optional)
- Service operation mode (mandatory)

An example is shown in Figure 1-3.

Figure 1-3.   Service General Description Panel

```
SOLVPROD--------- ServiceView : Service General Description ------$SERVICE-0001
Command ===>                                                    Function=ADD

System Name ... $SERVICE   Database Version ... 0001


Service Name ........ OUTLET_____



Operation Mode .....+ MANUAL_____
Short Description ... Service for retail outlet
Long Description .... Service to monitor the availability of the database_____
                     to four retail outlets_____
                     _____
                     _____




  F1=Help      F2=Split    F3=File     F4=Save
               F8=Forward  F9=Swap                 F11=Panels   F12=Cancel
```

⚠ **Warning**

It is recommended that you specify MANUAL as the operation mode until the service has been fully defined. Specifying AUTOMATED during the definition stage will cause system activity unless the global operation mode is set to MANUAL.

Step 4.   Press F8 (Forward) to access the Availability Map panel.

Step 5. Specify the availability requirements of the OUTLET service.

You want the OUTLET service to be available during business hours so that shop assistants can access the warehouse database. Therefore, the desired state for the OUTLET service is ACTIVE during those hours. The desired state of the OUTLET service outside of business hours is not important so its desired state is INACTIVE, which means it is ignored. With the availability map, you can schedule this change in the availability by using timers.

> **Key Concept**
> If the desired state of the service is ACTIVE, the desired state of any resources belonging to the service is overridden. However, the desired state of a resource will come into effect when the service no longer has control.

To define an availability map that changes the desired state of the OUTLET service from ACTIVE to INACTIVE after business hours and from INACTIVE to ACTIVE during business hours, perform the following steps:

    a.   Enter **OUTLET** in the Map Name field.

    b.   Press F10 (EditMap) to enter the information for the timer.

    c.   Tab to the Timer Details section, and enter the values as shown in Figure 1-4.

        The asterisk (*) represents all days of the week.

Figure 1-4.   OUTLET Service Availability Map

```
SOLVPROD--------- ServiceView : SVC OUTLET Availability Map ------$SERVICE-0001
Command ===>                                                 Scroll ===> PAGE

. Map Details ----------------------------------------------------------------.
| Map Name .....+ OUTLET                               Expire Delete ... NO    |
| Description ... Availability Map for OUTLET                                   |
| Timer Execution Control System ........+ COMP001  (Service /Shared Images)   |
| Attached Resources ..                                                        |
'-----------------------------------------------------------------------------'
. Timer Details --------------------------------------------------------------.
|                                              D=Delete I=Insert R=Repeat      |
|    Day Date        Time       SVC/Resource Name Des.State Mode       Status  |
|    *               18.00.00                      INACTIVE            ON       |
|    *               8.00.00                       ACTIVE              ON       |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|  F1=Help    F2=Split    F3=OK      F4=Return  F5=NextTmr  F6=Sort            |
|  F7=Backward F8=Forward F9=Swap                F11=Right   F12=Cancel         |
'-----------------------------------------------------------------------------'
```

d. Press ENTER. When you do this the timer display changes to show a separate timer for each day of the week. Press F6 (Sort) to list the timers chronologically (see Figure 1-5).

Figure 1-5.   OUTLET Service Timer Details

```
SOLVPROD--------- ServiceView : SVC OUTLET Availability Map ------$SERVICE-0001
Command ===>

.- Map Details -----------------------------------------------------------------.
| Map Name .....+ OUTLET_____                        Expire Delete ... NO      |
| Description ... Availability Map for OUTLET                                    |
| Timer Execution Control System .........+ COMP001  (Service /Shared Images)   |
| Attached Resources .. _                                                       |
'-------------------------------------------------------------------------------'
.- Timer Details ----------------------------------------------------------------.
|                                                                                |
|     Day Date        Time       SVC/Resource Name  Des.State Mode      Status   |
|     MON             08.00.00 OUTLET               ACTIVE             ON         |
|     MON             18.00.00 OUTLET               INACTIVE           ON         |
|     TUE             08.00.00 OUTLET               ACTIVE             ON         |
|     TUE             18.00.00 OUTLET               INACTIVE           ON         |
|     WED             08.00.00 OUTLET               ACTIVE             ON         |
|     WED             18.00.00 OUTLET               INACTIVE           ON         |
|     THU             08.00.00 OUTLET               ACTIVE             ON         |
|     THU             18.00.00 OUTLET               INACTIVE           ON         |
|     FRI             08.00.00 OUTLET               ACTIVE             ON         |
|  F1=Help    F2=Split   F3=OK      F4=Return   F5=NextTmr  F6=Sort              |
|  F7=Backward F8=Forward  F9=Swap                 F11=Right   F12=Cancel        |
'-------------------------------------------------------------------------------'
```

e. Press F8 (Forward) to see the timers for each day of the week. Ensure that ON is specified in the Status field for each one or the timer will not be invoked.

f. Press F3 (OK) to exit the timer edit mode.

Key Concept

The timer execution control system is the name of the system from which the time is taken for the execution of the timers. The tutorial only has one system and that system is the control system.

If you have more than one system's resources defined in a service, you need to specify from which system the current time is to be taken.

Step 6.   Press F8 (Forward) to access the Service Filters panel.

Step 7.   Specify how important each resource is to the service. This is done by using the Service Filters panel. You need to identify each of the resources (or groups of resources) of the service and give each a weighting determined by how important they are in the service.

Key Concept

> The weight can be fixed or proportional and ranges between 0% and 100%. With a fixed weight, all members in a line entry have the weight specified in the Weight field. With a proportional weight, every member in the line entry has an equal proportion of the weight specified in the Weight field.

The resources critical to the service were identified in *Task 1—Identify the Service You Are Providing* on page 1-5. Table 1-1 indicates how important each of those resources are to the availability of the service.

Table 1-1. Importance of Resources to the Service

Resources	Importance to Service	Weight
APPL1	This resource provides connectivity to the CICS region. The actual state of this resource affects the actual state of the service.	Fixed 14%
OUTLET1A and OUTLET1B	Each outlet has four terminals. There are two SNA groups for each outlet. If one SNA group fails, the outlet is still functional. The actual state of one SNA group should not affect the actual state of the service.	Proportional 14%
OUTLET2A, and OUTLET2B		Proportional 14%
WAREHOUSE	The warehouse only has one terminal. The actual state of the SNA group at the warehouse affects the actual state of the service.	Fixed 14%
CICS started task	This resource provides the availability of the CICS region. The actual state of the started task affects the actual state of the service.	Fixed 14%
CICS database	The CICS database provides the information being accessed by the outlets. The actual state of the database affects the actual state of the service.	Fixed 14%
CICS transactions	There are two types of transactions. The actual state of one transaction may not affect the actual state of the service	Proportional 14%

Step 8.   Enter the values in Figure 1-6 to add each of the resources in your service to the Service Filters panel.

Figure 1-6.   OUTLET Service Filters

```
SOLVPROD---------- ServiceView : SVC OUTLET Service Filters ------$SERVICE-0001
Command ===>                                                      Function=ADD

.----------------------------------------------------------------------------.
|  Below is a partial list of the Filters which define the resources in this  |
|  Service. Use LIST (F10) to work with the full, scrollable list of Filters. |
'----------------------------------------------------------------------------'
. Service Filters List -------------------------------------------------------.
|                                                                              |
|    Class     Name                SMF ID   Type          Weight Weight Type   |
|    CICDB_    CICSONE.DATABASE__   SDD1    *_____   14_ %  FIXED_____  |
|    STC___    CICSREGION_____   SDD1    *_____   14_ %  FIXED_____  |
|    TRANS_    TRANSACTION*_____   SDD1    *_____   14_ %  PROPORTIONAL  |
|    APPL__    APPL1_____   SDD1    *_____   14_ %  FIXED_____  |
|    SNAGRP    WAREHOUSE_____   SDD1    *_____   14_ %  FIXED_____  |
|    SNAGRP    OUTLET1*_____   SDD1    *_____   14_ %  PROPORTIONAL  |
|    SNAGRP    OUTLET2*_____   SDD1    *_____   14_ %  PROPORTIONAL  |
|    _____    _____   ____    _____    ___ %  _____   |
|    _____    _____   ____    _____    ___ %  _____   |
|    _____    _____   ____    _____    ___ %  _____   |
|    _____    _____   ____    _____    ___ %  _____   |
'------------------------------------------------------------------------------'
 F1=Help     F2=Split    F3=File     F4=Save      F5=Model
 F7=Backward F8=Forward  F9=Swap     F10=List     F11=Panels   F12=Cancel
```

Step 9.   Press F8 to access the State Change Thresholds panel.

Step 10.   Define how the status of the service members affects the status of the service.

Key Concept

For each actual state, you specify a percentage threshold value that, if equalled or exceeded, causes the service to take on that state (unless a state of higher severity has also satisfied its threshold requirement). This threshold is expressed as a combined weight of the members required to deliver the service.

A weight was associated with each member of the service in Step 8. This weight expresses the level of impact the individual member has on the threshold calculation for the actual state of the service.

Step 11. Enter the threshold values shown in Figure 1-7.

> **Note**
> These values are a starting point. The thresholds and weightings need to be
> reviewed in an ongoing process until the service status accurately reflects the
> business view of the service being defined.

Figure 1-7.   OUTLET State Thresholds

```
 SOLVPROD--------- ServiceView : SVC OUTLET State Thresholds ------$SERVICE-0001
 Command ===>                                                      Function=ADD

                         .-------------+-----------.
                         | Actual State | Threshold |
                         +------------------------+
                         |   UNKNOWN    |   7__ %   |
                         |   FAILED     |  14_ %    |
                         |   ACTIVE     |  98_ %    |
                         |   STARTING   |   7__ %   |
                         '-------------+-----------'
 .- Threshold Evaluation ----------------------------------------------------.
 | UNKNOWN  - The combined weights of resources within the Service with an   |
 |            Actual State of UNKNOWN.                                        |
 | FAILED   - The combined weights of resources within the Service with Actual|
 |            States of INACTIVE, FAILED, DEGRADED or STOPPING.              |
 | ACTIVE   - The combined weights of resources within the Service with an   |
 |            Actual State of ACTIVE.                                         |
 | STARTING - The combined weights of resources within the Service with an   |
 |            Actual State of STARTING.                                       |
 | If none of the thresholds is exceeded then Actual State is set to DEGRADED. |
 '---------------------------------------------------------------------------'
 F1=Help     F2=Split    F3=File     F4=Save
 F7=Backward F8=Forward  F9=Swap                    F11=Panels  F12=Cancel
```

During operation, the service will take on the actual states as follows:

Actual State of Members	Actual State of Service
One or more members are in the UNKNOWN state.	UNKNOWN
One or more members (at least two members for the outlets and transactions) are in a DEGRADED, FAILED, INACTIVE, or STOPPING state.	FAILED
All members are in an ACTIVE state.	ACTIVE
One or more members are in the STARTING state.	STARTING

For example, if the CICS database has an actual state of UNKNOWN, the actual
state of the service is also UNKNOWN because the database has a weighting of
14%. Another example is if two terminals of one outlet become INACTIVE, the
actual state of the service becomes DEGRADED because they have a proportional
weighting of 7% and does not exceed any of the thresholds.

Step 12. Press F8 to access the State Change Exits panel.

Step 13. Specify a state change exit process that is invoked if the service changes to a given state. You can specify the process to be invoked when a service changes from its desired or actual state.

For example, you might want to invoke a process when the actual state of the OUTLET service changes from ACTIVE to FAILED. Such a process is the supplied PROBSOLV global process that creates a problem ticket in the SOLVE:Problem product. (For details about how to set up and use SOLVE:Problem, see the *SOLVE:Central Implementation and Administration Guide*.)

Step 14. Specify the data as shown in Figure 1-8 to invoke the supplied global process to raise a problem ticket in SOLVE:Problem when the service fails.

Figure 1-8.   OUTLET State Change Exits

```
SOLVPROD-------- ServiceView : SVC OUTLET State Change Exits -----$SERVICE-0001
Command ===>                                                   Function=ADD

. State Change Exits ---------------------------------------------------------.
|                       S/B=Browse U=Update I=Interactive L=List P=Parameters |
|     Invoked                   System   Process  Parameters                 |
| ___ BEFORE ACTIVATION         _____  _____                           |
|     State   Change   Change                                                |
|     Type    From     To       System   Process  Parameters                 |
| ___ DESIRED ACTIVE___ FAILED___ _____ PROBSOLV                          |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
| ___ _____ _____ _____ _____ _____                           |
'-----------------------------------------------------------------------------'
 F1=Help      F2=Split     F3=File      F4=Save
 F7=Backward  F8=Forward   F9=Swap                    F11=Panels   F12=Cancel
```

If you want to create your own process, see the chapter "Defining Processes to Implement Complex Operations" in the *Common User Guide*.

Step 15. Press F8 to access the Automation Log Details panel.

Step 16. The panel enables you to change the logging requirements. For your logging
purposes, the default setting on the log details panel is sufficient (see Figure 1-9).

Figure 1-9.   OUTLET Automation Log Details

```
SOLVPROD------ ServiceView : SVC OUTLET Automation Log Details ---$SERVICE-0001
Command ===>                                                    Function=ADD

. Resource Log Controls ----------------------------------------------------------.
|                                                                                  |
| Log Table Size ............. 150_                                                |
| Log to Automation Log....... NO                                                  |
| Log to Console ............. NO_                                                 |
| Log to OCS Window .......... NO_                                                 |
|                                                                                  |
'----------------------------------------------------------------------------------'
. Resource Log Content Controls --------------------------------------------------.
|                                                                                  |
| Log All System Msgs ........ NO_                                                 |
| Log Internal Audit Trail ... NO_                                                 |
|                                                                                  |
'----------------------------------------------------------------------------------'




   F1=Help      F2=Split    F3=File      F4=Save
   F7=Backward  F8=Forward  F9=Swap                   F11=Panels   F12=Cancel
```

Step 17. Press F8 to access the Owner Details panel.

Step 18. On the Owner Details panel, identify up to two people who can be contacted if
the service has operational problems. You need to specify yourself and another
support person.

Step 19. Press F8 to access the Extended Functions panel.

Step 20. Specify an exit NCL procedure that can be used to extend the service functions
provided in the region. For example, you might have an in-house application for
invoices that you want to be able to access, or you might have all your service
level agreements available on the system.

The service definition is complete. Figure 1-10 shows the defined service.

Figure 1-10. OUTLET Service Defined
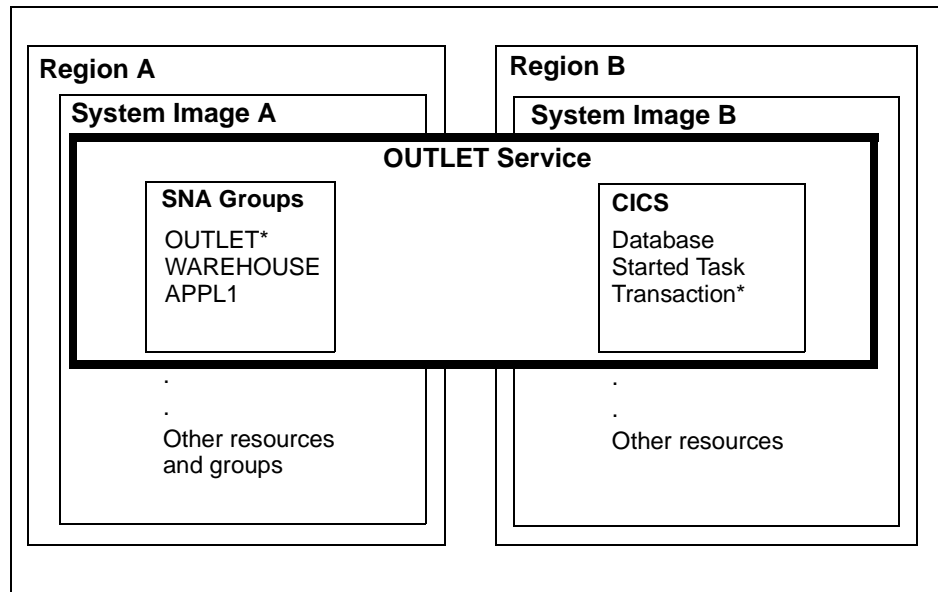
Task 4—Automate the Service

In the service definition you specified the requirements for the availability of the service. Now you need to start the automation of these requirements. To automate the service, perform the following steps:

Step 1.   Enter the **/SMON** shortcut to access the Services status monitor.

Step 2.   Enter **Z** beside the OUTLET service to zoom in on the resources defined to your service.

Step 3.   Ensure that the resources are in the AUTOMATED mode of operation. To set the global mode, enter the following command at the Command ===> prompt:

```
GLOBAL MODE=AUTOMATED
```

This command sets the global operation mode to AUTOMATED.

Note

 This command will affect all the resources in your region.

Step 4.   Press F3 (Exit) to return to the list of monitored services.

Step 5.   Enter **DB** beside the OUTLET service on the status monitor to access the service description.

Step 6.   Select the Service General Description panel, and change the operation mode to AUTOMATED. This changes your service definition from manual mode to automated mode.

For more information about controlling the automation of your system, see the *Common User Guide*.

Task 5—Monitor the Service

Now that your service is automated, you need to be able to monitor what is happening to the service.

There are two types of monitor that you can use:

- Status monitor
- Graphical monitor

Using the Status Monitor

To access the status monitor for services, entering the **/SMON** shortcut. Your service should appear on this panel. When the status of a service indicates a problem, you can zoom in on the service by entering Z beside the service on the monitor to view the status of the underlying resources.

For more information about the status monitor, see the *Common User Guide*.

Using the Graphical Monitor

A graphical monitor icon panel enables you to design an iconic representation of your service. The colour of an icon reflects the status of the represented member that is in the worst state. You can zoom in on the members of an icon.

To access the graphical monitor, enter the **/GMON** shortcut. Before your service can be displayed as an icon on the graphical monitor, you need to create an icon panel. For background information about how to create an icon panel, see the *Common User Guide*.